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MONTHLY REVIEW

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Nothing worth having can be obtained without the cost of effort.

MONTHLY REVIEW

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EDITORIAL.

By The Editor.

The names of five new associate editors will have been noticed by the readers of the October issue of the Monthly Review. Three from that land of promise, the East; two from the wild and woolly West. The members from the East we thank for their ready acceptance, but we also thank them for mutely agreeing to aid in the navigation of our good ship, The Monthly Review. These gentlemen are all well and favorably known to the Society.

E. W. Heil we all know for his research work on nickel solutions. Ed is a brainy chap, a prince of good fellows, but a rotten pool player. J. Birnbaum is the man who made Milwaukee brands famous, his contributions to our knowledge of brass plating will always keep those back numbers of the Review a treasured part of our library. B. F. Kusterer, the vice president of the hustling Bridgeport Branch, is an expert on gold, copper and silver plating. Bridgeport is honored by having a man of Mr. Kusterer's ability in their ranks. E. W. Faint, the brilliant leader of Newark Branch, is also well known for his contributions to electro plating knowledge. We have it on good authority that Mr. Faint has sons who are following in father's footsteps.

W. Voss, as the chairman of the New York laboratory committee, is at present undertaking work which is of immense importance to the whole Society. His letter on the 16th page of the October Review, outlining his plan, should be carefully taken note of, and will surely receive the hearty co-operation of every branch. We took no chances of Mr. Voss refusing the appointment of associate editor. We pointed out to him that while the constitution gave the editor authority to appoint associate editors, we were unable to find any clause which gave them the right to refuse.

The Boss—"As a shipping clerk, you're the last degree of incompetence. Get your pay and get out."

The Shipping Clerk—"All right, I'll go if you say so, but you needn't feel so smart about it. I've been fired by lots better firms than this."

READ AT THE CLEVELAND CONVENTION.

SOAP AND CAUSTIC SODA AS CLEANSING AGENTS.

By A. G. REEVE.

One great trouble with many of us platers today is that we are so busy getting out our daily product that we devote very little time to preparedness.

We are doing excellent plating today and are hoping and expecting to do the same tomorrow, but have very little data upon which to base the claim that we *know* that tomorrow's plating will be as good as today's.

It is a common saying among many who employ platers that "Every plater falls down occasionally." Be that as it may, it is my firm conviction that these fall-downs would be much less frequent if we would let our heads save our heels, and devote more time to preparedness.

The knowledge of the fundamental principles of chemistry are a great help, and while the co-operation of a reliable chemist is much to be desired, one of the objects of this brief paper is to indicate a way whereby the studious methodical plater can, by his own efforts, greatly diminish his percentage of inferior work.

Let us consider the various cleansing solutions, dips, strikes and plating baths as tools. For best and greatest results the tools must be in the best possible condition.

What is the best condition?

Here we differ—this difference of opinion is doubtless due to the multiplicity of processes of manufacture as practiced at the various factories and the endless variety of articles that receive plating, and many have discovered that a cleansing material or method that has given excellent results for one plater has been unsatisfactory for another. Take the electric cleaner for instance. About fifteen years ago there was quite a furore about it and it was advocated for cleaning almost everything. Some well known platers used the scheme 35 years ago and soon discovered that like many another good thing it was not a panacea for all the platers' troubles but answered a very good purpose if used within its limitations.

The soap solution is a good tool for certain purposes. When one first begins the use of soap an extremely weak solution should first be tried and results recorded; strengthen the solution and try again, carefully observing and noting results. Keep on strengthening and observing results until you are sure you are obtaining inferior results because of too strong soap, then reduce carefully and observe exactly at what point the solution is most efficient. This being determined try the soap at boiling and less than boiling temperatures. Some work can be cleaned more successfully in soap at 185° than it can in boiling. The exact degree of concentration and temperature have been determined, and if maintained carefully work should be cleaned without discoloration in 25 minutes or preferably 15 minutes.

If the work discolors add a little ammonium chloride or some other suitable substance. Don't let the work get discolored even slightly. Therefore don't let the solution become weak or impoverished. Any tool will soon be in poor condition if overworked or misused, therefore let us not overtax the cleansing tools by cleaning too large volumes of work without changing the solution, or by trying to have the cleansing solution remove more dirt and grease than it is capable of doing quickly and well.

Try out the various makes and brands of soap, giving each the same careful, systematic series of trials as already mentioned. Sometimes borax, when added to the soap solution, will make the dirt fall off more freely, although it does not perceptibly minimize staining tendencies. It is much more expensive than sal soda, but if it gives reliable results, it is probably more economical in the long run.

It is a good plan to make *tabulated* notes of the exact composition, concentration and temperature, etc., of the solutions used in each trial, providing ample space at the margin or elsewhere for recording the results accomplished in each individual case whether good or bad. Be careful to record the failures, as they are of value for future reference.

These tabulated records are very helpful in making comparisons and judging accurately which solution is most efficient.

The useful life of a soap solution depends largely upon the volume and dirtiness of work passed through it and by a little careful observation and record of volumes of work done, one can soon tell in advance about when it will cease to be efficient. This is one place where we can keep prepared by changing or strengthening this cleansing solution *before* it does bad work instead of *after*, thus keeping ahead of the game, so to speak, and in so doing we have in the plating room one tool that is always sharp and reliable and never does bad work nor acts as an accomplice to other plating room tools in the production of bad plating, and the next time there is anything wrong with the plating it is some satisfaction to realize that there is one thing in the room that has been maintained absolutely O. K., don't need investigating and the locating of the cause of the trouble is therefore proportionately more simple.

Soap, of course, is only a preliminary and cannot do all the cleansing. The part that it does, however, although at times seemingly small, is quite important.

It has been very noticeable that work that has been washed and cleaned thoroughly and dried and stored for a time does not clean up in the subsequent caustic alkali solutions as quickly as work that is taken from soap liquid rinsed and placed directly in the caustic. Therefore it has often been found advantageous to take work that has been washed and stored and soap it for awhile merely to soften as it were the greasy or soapy films that have become dry and hard, so that the caustic will perform its functions more quickly.

The rapidity with which a dilute caustic solution will do its work under these circumstances is very interesting. One pound

caustic to ten gallons soft water works very well when boiling hot and fresh. This gathers carbonate very rapidly, but works best when there is the least possible carbonate present. A newly made solution of 30 or40 gallons and having had three or four pounds caustic dissolved therein will often show 7% or so of carbonate by test and at the end of the first day's use will have perhaps as high as 15%. This newly made dilute solution, testing from 7% to 15% carbonate, and when properly catalized with an extremely small amount of soap or resin, will clean work that comes direct from the soap kettle in 30 seconds in a perfect manner, so far as it is possible for any alkali to do, and can be dipped in a hydrochloric acid pickle and will not show greasy afterward. The work thus cleaned may be passed through a cyanide dip and nickeled or bright dipped and silver plated as desired.

The efficiency of the caustic solution depends perhaps more upon its working rapidity than anything else. It is a good plan to test it for speed one or more times during the day. This is easily done by taking a few pieces of work that have already been prepared for the potashing operation (as it is commonly called) and immerse them in the dilute boiling caustic for perhaps 15 seconds and rinse in hydrochloric pickle, then water, and see if they show any signs of greasiness while being held in the air and carefully watched for 60 seconds—this seems like a short time, but if you time yourself, I think you will find it a longer period than is customary—if these samples show greasy, put them back with your other goods, do not use these for a second speed trial, but take another string of same goods as first tried and leave these in the caustic 25 seconds and if they stand the test that made the first lot fail, you have what may be termed a 25-second caustic solution and can be governed accordingly in fixing the time to be given all your work for that day. Three minutes would perhaps be a good safe time for such a solution.

Aside from the factor of labor economy, it will doubtless be generally conceeded that the briefer the process and the shorter the time in which the cleansing can be thoroughly accomplished, the better are the chances of obtaining excellent final results.

The catalizing is very important. Although each plater can add a trifling quantity of soap, resin, animal or vegetable fat, and catalize the caustic solution himself, we have had excellent success with caustic soda that was catalized by the maker and is very convenient to use.

The volume of grease removed or absorbed from soap-cleaned work, is so small as compared with the amount of alkali in even this weak caustic solution, that the quantity of work passed through it seems to have little bearing upon its efficiency or length of active life.

This is in striking contrast to the performance of the soap solution whose term of usefulness depends mostly upon volume of work cleaned in it.

The amount of carbonate present is the important factor—the less of it the better. As already mentioned a caustic solution hav-

ing 7% carbonate in the morning will have 15% in the evening, and if it is kept boiling all day it will acquire the carbonate any way, whether any work is put through it or not.

It will take much longer to clean work the second day in the caustic that is now over 15% carbonate than it did the first day when the carbonate ranged between 7% and 15%, and it will be for the plater to decide whether the caustic is cleaning his work with sufficient rapidity or not. The greater the percentage of carbonate and the longer the time the work remains therein the more likely we are to have stains and the accompanying annoyances and greater likelihood of poor work.

It is often customary to add to the strength of a potash solution as soon as it fails to do its work with sufficient rapidity and although that sometimes improves the situation or at least we try to think it does, we can also probably all recall instances where strengthening has not helped matters a bit and we wondered why.

Strengthening up increase the caustic but don't reduce the carbonate at all—on the contrary, the stronger caustic forms the carbonate only the more rapidly, and this is of little value as a cleanser for the plater.

The time has been when this forty-gallon solution would have cost only 10 or 12 cents. Now it costs 30, but even at this figure it is less expensive to throw away the old solution with its detrimental carbonate and use a like amount of new material than to find ways and means of eliminating the ever increasing carbonate.

In electric cleaners the carbonate is desirable—the more of it the better, but that is another chapter not included in the title, so I'll stop now before I get off the track.

DISCUSSION.

MR. FRAINE: I don't know as I have anything to say in the way of discussion or criticism, but I have considerable to say in the way of endorsement. I don't think there is anybody that uses more in the way of soap cleaners than I do. In our plant we have spent years in trying to find a suitable cleaner for our particular class of work. When I say that, I realize that this may not apply to your work, but it does apply to the class of work we are handling, and are handling at the present time. Mr. Reeves spoke about the advisability of experimenting with any and all brands of soap. We did it, and we are still doing it, and I presume we will continue doing it until the end of time, because we are just foolish enough to try anything once, and some things more than once. Now, our work, especially our cabinet work, is largely bronze cast containing a proportion of tin, and the ordinary caustics, and potash cleaners, and caustic soda cleaners, have a very detrimental effect on them, especially when they come to the plating department in the condition that our work is compelled to come to us in. It has a background, or ornamentation, and when it comes, the buffer must leave a certain amount of polishing compound and grease from the polishing wheel on the surface, and in the ground. Sometimes this is ground into the background, and is exceedingly hard to remove.

I take it, Mr. Reeves, that most of your work is smooth surface work.

MR. REEVES: Largely, but there is a good deal of dirt remaining.

MR. FRAINE: You don't have the backgrounds to hold the dirt to any extent, do you?

MR. REEVES: Very little.

MR. FRAINE: Well, practically all of our work is that way. And coming from the polishing wheels, with the dirt ground in the background, we all know what a proposition that is. In using the caustic and potash cleaners, the result would be that before the dirt would be soft enough to remove with the brush, and finished, they are absolutely spoiled. It was necessary then that we should find some other method of cleaning our work. To that end we started to experiment with soaps. We tried all manner of soaps under different conditions, and we found a good many remarkable things. We found for one thing that price of the article had no relation at all to its efficiency. Some of the cheapest we got were the very best. Another thing we found, and in this case I want to say that most of our soaps were the ordinary laundry cheap soaps. Another thing we found was that the soap best suited for laundry purposes was the least suited to our purposes. We also found that the more neutral the soap was, the better it was. We made another remarkable discovery, and that was, that a soap which contained the largest contests of silicate of soda, gave us the best cleaning property, and before we got through, we had built up a soap for a standard solution for our purpose which was made up largely of a neutral soap with the silicate of soda addition. In that work, we can let our work stand for a week, if necessary, without impairing the finish. It will, of course, after awhile, stain some, but not to the extent it would in the caustic or straight potash cleaners, and to anyone who has not used cleaners to any great extent, and especially on background work, I think you will find it a very valuable addition as a tool for the plating works. I know that the doctor's experience bears us out in many ways. I do want to say here that I have been laughed at considerably, especially by our chemists, about silicate of soda as an additional agent in soap solutions. And the way we finally came to settle on that was this: In order to find out what particular thing in all sodas gave them their particular cleaning value, we took copies of the analysis of every soap that came in to determine their different values, and we found that the soaps which contained the largest percentage of silicate were the soaps that gave us the greatest cleaning properties. Consequently, we made a practice of building up with the silicate, and we regard that as one of the best things we have ever found as an additional agent for additions to soda, or even caustic solutions.

MEMBER: This problem of soaps is a very interesting one, and being in the same line of work Mr. Reeves is connected with, I would like to have a word about this matter. We have come to the conclusion during the several years in which we tried a good many

soaps of outside manufacturers, that the price was inversely proportional to the efficiency of the soap, and as a result we did not get uniform results. From one barrel the work would be all right, and from another barrel would be no good. And as we used quite a bit of soap solution, in our silver plating work, we came to the conclusion to manufacture our own soap, and we manufactured a potash soap, which was very efficient up to the time of the war. We have not had any trouble in regard to uniformity, and I think that is a great fault with soaps manufactured by outsiders. As I said, we used a potash soap before the war, and then on account of the cost of caustic potash, we had to get something else to work just as well. So we worked out a soap using caustic soda, which has given us results today practically as good as we got with the caustic potash. I always heard older platers say there is nothing like an old whale oil soap for washing tripling composition from silver. Then I heard they had to leave some of the old whale oil solution in the tank when they made up a new solution. I could not see anything to that. So today we are washing work efficiently using caustic soda soap together with a small amount of borax. I think if this is tried in other places on a similar kind of work, it will be found to work out efficiently.

MEMBER: I would like to ask Mr. Fraine if he would give us the formula of the soap he has found to be so efficient?

MR. FRAINE: While I cannot give that to you off-hand I would be pleased to send that to the editor for publication, as we have found it satisfactory for our particular line of work.

EXTENSION WORK.

H. H. WILLIAMS, SUPREME PRESIDENT

The work of securing new members in cities where branches are located is done through the several branches. The reports in the Review show a steady and continual growth of most of the branches. The securing of new members who are away from those centers has largely fallen to the Scouts, who are always on the job. Still there are many platers out of the fold, who need the privilege of membership in the A. E. S.

The larger our membership the more good we can accomplish. Having had no literature for propaganda work, I have secured from E. W. Heil, Wichita, Kansas; Joe Walters, Richmond, Va., and Otto Holmbacher of Decatur, Ill., letters in which they state the benefits of membership in the A. E. S. to those so situated that they cannot attend meetings. Copies of these letters with a personal letter, will be mailed upon request to any prospective member, upon the receipt of his name and address. We hope in this way to assist the branches in their work. Send names direct to H. H. Williams, 4156 Botanical Ave., St. Louis, Mo.

Mary had a little foot,
And, harrowing to tell,
She put it in a smaller boot,
And then it hurt like (censored).

READ AT THE CLEVELAND CONVENTION.

THE RELATION OF THE TRADE JOURNAL TO THE ELECTROPLATER.

By DR. F. C. STANLEY, EDITOR OF THE METAL RECORD AND ELECTROPLATER.

Fifteen years ago, a convention of electroplaters would have been considered a wild dream. Fifteen years ago the electroplater was almost a different species of the genus homo. He knew it all. He gave nothing to others and expected from others nothing except that which he bought in the way of secrets. His own secrets he guarded with jealous care, believing that by this means only the value of his services could be conserved. His work was surrounded by mystery, and he was glad to have it so.

The plater of today does not know it all. He is ready to give all his knowledge to a brother plater, and expects his brother plater to give as much in return. The secrets are all common property. They are no longer to be guarded, and when a man comes to us offering to sell us a formula, we are disposed to laugh at him, for he looks to us like a man wearing a derby hat of a vintage of 1895.

Electroplating today is one of the most highly developed arts in America, and the electroplater is one of the most progressive and intelligent factors in our industrial uplift.

There are two causes of this rapid change: The Electroplater Society and the trade journal. It is not within my province to eulogize the work of the former, great as it is, but the trade journal has played no unimportant part in this change.

Dr. Edw. Ewing Pratt, chief of the Bureau of Foreign and Domestic Commerce, says, "I believe that the trade papers are the most effective agencies for trade promotion and industrial development that exist."

But we do not need the commendation of the United States government to convince us of the value of the trade journal to the electroplater. He knows it. All modern platers read these papers, and in all our experience we have never found a reader who could not discover in them something of value to him. They lay before the less experienced a means of education. They present to the more experienced the viewpoint of the specialist in some phase of the industry, which interests him. They tell him what others are doing—a thing which in the past was accomplished by subterranean methods only. They help him to solve his problems. They present to him the latest devices and wrinkles of the art in the pages devoted to advertising. Most of all, they offer a wealth of reliable information to be obtained at a nominal cost and furnished by trained experts in every department of the trade.

This is what the electroplater wants, and this is what the trade journals are striving to give, and in large measure they are delivering the goods.

The plater subscribes, renews and usually accepts in silence what he receives. Occasionally he writes to express his surprise that so much can be given for so little.

Trade journals are in a position not unlike our great colleges and universities. The students in these institutions pay less than 20% of the cost of what they receive. The subscribers to trade journals pay much less than this. In many cases the subscriber does not pay for the paper on which the journal is printed, yet it is the approval of the subscriber or reader which make its existence a possibility, just as the attendance of the students makes the college a possibility.

Colleges are supported by the generosity of the wealthy and philanthropic. The trade journals are supported by the advertisers, often with the belief that they are making a good investment for themselves as well as for others. Some advertisers approximate the attitude of the supporter of educational institutions and are willing to contribute their part to an educational project, and merely ask whether the readers approve of the accuracy and value of the information which they receive.

They are the angels of the trade journal. They pay the contributors, the cost of printing, the salaries of the editors and the salaries and expenses of the men who solicit their contributions. Many of them say that they do not expect pecuniary returns, but wish to do their part in contributing to an industrial development.

This is casting bread upon the waters, which, although they do not expect it, will return to them after many days. It will return to them because of the increased development of the art, the expansion which results from this, and the ultimately extended market for their goods.

The next time you look at an advertisement, you will regard the advertiser not as a selfish scheming tradesman, but as the donor of a valuable educational institution of which you are reaping the benefit.

The trade journal is for the electroplater, and its existence depends upon his approval. The electroplater should therefore support it, if it is worthy, by subscribing. More than this, he should submit his difficulties and problems to it, because, in doing so, he is helping many others who are likely to have the same troubles, and is supplying to the editors information as to the needs of the readers —a most difficult thing to get.

The man who sells platers' supplies pays the cost, often out of generosity and philanthropy, we believe, but he pays. More power to him.

We recall with gratitude the many helpful suggestions which have come to us from our friends in this society, help which often meant the sacrifice of well-earned leisure. We know that we have by no means exhausted the sources of knowledge and information which can be imparted. It is the purpose of your trade journals to be of even greater service to the electroplater in the future than in the past, and with an assurance of your contained co-operation and support there can be no doubt of it.

Discussion.

Mr. Hawkins: I would like to make a remark or two. The trade journals are a wonderful help to the plater, and especially in times of trouble, when he gets into difficulty, and needs some information, perhaps when he doesn't understand how to do it, or something goes amiss with his solution, or with some of the chemicals he is using, he depends a lot on the trade paper. And I recall the "Brass World" comes to my mind now. Some years ago it was under the leadership of the late Edwin S. Sperry. I think Mr. Sperry never published an answer, or formula, that wasn't correct or dependable. I always felt that whenever I read anything that Mr. Sperry wrote, it was absolutely dependable. Unfortunately, since then, I have read many answers to queries in many of our journals that our practical platers absolutely could not depend on, and that we know by reading some of these answers to questions. To us they seem ridiculous. That is one of the things this platers association must correct. And the men who answer those questions, who are our teachers and instructors, I believe, should not only be practical men, but they should be electrochemists, and if they cannot be that, at any rate they should be practical platers.

A TALE OF CRIME.

By The Editor.

There was an old plater, and what do you think,
He quit plating nickel, and plated with zinc;
He told people nickel and zinc were the same,
But the war price of zinc put him out of the game.

But this wicked old plater continued to sin,
And electro-deposited nickel from tin.
Ninety-two per cent anodes from tin can be made,
But his work got so bum, he lost all of his trade.

He went making watch chains, and having them sold,
They were plated with brass, but he said they were gold;
But deception like this can quickly be seen,
For a week after buying these chains would turn green.

Then this sinfull old plater, crime hardened and bold,
Went selling iron anodes for nickel I'm told,
And worked the supply game for all there is in it,
For he said, is there not a new one born each minute.

But the A. E. S. makes all the platers so bright
That they won't buy supplies unless they're all right;
And now as a shiner he's working at last,
Working hard on rough castings, regretting his past.

Now platers take warning, on such things go slow,
And never do wrong if you can't make it go.
Its hard work to polish, we all must agree,
So boost all the time for our society.

READ AT THE CLEVELAND CONVENTION.

MAKING OUR BRANCH SOCIETY MORE PROFITABLE.

By WALTER FRAINE, Supreme Secretary A. E. S.

In order that any organization, either business, social, religious, fraternal or educational, may survive, it must show a profit on the right side of the ledger. This profit need not necessarily be expressed in dollars and cents but may appear in any form which will give value received for the amount of effort required to make a satisfactory showing. In a business organization the profit appears in the money returned in dividends, in a social organization it appears in the good times enjoyed by the members, in a religious organization and also in the fraternal it appears in the amount of good accomplished; and in an educational organization we receive our dividend in the stimulation of our mental processes and the broadening of our knowledge. In order that we may receive the largest return on our investment it is necessary to plan it so that it will function properly for the purpose intended. This result is often defeated through lack of proper organization or system.

What is required is a carefully thought out plan for a definite purpose and suited to the needs and opportunities of those who are to utilize its machinery of operation.

Particularly this is true of such a society as the American Electro-Platers Society, composed as it is of men who are engaged during the working hours of the day in securing the required output of their departments with little or no time to devote to the working out of the many problems which arise in their daily work due to the many demands which are constantly being made for new processes and methods, which are brought about through the ever-widening field of the art of electro-plating in modern industry. The American Electro-Platers Society was born as a result of our recognition of the fact that we were in need of a means whereby we might discuss our problems on a common basis with others engaged in our own or allied activities, study new methods and processes and to get in touch with the best current thought and practice of the art.

After an existence of some seven or eight years as an organization with a serious purpose it were well to take an inventory and find out how we stand. Are our assets, from an educational standpoint, satisfactory? Is our machinery of operation in such good condition that we accomplish all that we have a right to expect from it? And does the organization return each one of us a dividend as great as it should with the facilities at our disposal?

I believe that you will agree with me that our assets are satisfactory in that we have as a plant a growing organization composed of our Supreme Society with its great educational facilities especially in the Monthly Review and sixteen thriving branches with unlimited opportunities. And I also believe that you will agree with me that our machinery of operation is not in such good condition that we accomplish all that we have a right to expect from it, or that the organization as a whole returns us as great a dividend as it

should with the facilities at its disposal. Where, then, lies the difficulty? From a careful study of the methods employed and results accomplished I am led to believe that our fault lies in a lack of system in conducting our branch society meetings in that they are not so interesting and instructive as they might be and consequently we do not receive from them all we ought.

If this be true we must look still further to determine the reason for the condition and I believe that we will find several.

First of all, the lack of a definite program of education; second, a limitation of the discussions to a small number of topics; third, the tendency to confine ourselves strictly to plating problems; fourth, a lack of interest and ambition, of a portion of the membership, and fifth, a too narrow vision of what our obligations are to our fellow members and the world at large.

Assuming that the reasons just given are responsible for our not receiving a greater dividend from our investment in the society, how shall we proceed to remedy the faults, improve the conditions and make our meetings so instructive and interesting that each of us will feel that we cannot afford to miss any sessions of our branch?

First of all, we need a definite program of educatioin suited to our requirements. In the past few months it has been my duty to ask of the various branch societies a number of questions relative to their plan of education. The answers returned show that very few have any fixed plan of systematic educational work, almost all depending on the papers of individual members and the question box for material for discussion, and to judge from the matter appearing in our publication, the Monthly Review, these questions cover a very limited number of subjects. My suggestion to remedy this condition is that a committee of several of our ablest members be appointed, to be known as the Committee on Education and whose duties would consist of formulating a program covering the requirements of the average plater in his work. This to consist of articles thoroughly covering each subject by the ablest men we can secure and presented to the members through the medium of the Review.

Next, that the discussion of the branch societies cover a wider field than they have in the past and more attention given to the discussion of gold, silver, bronze, tin and zinc deposition.

Lectures on chemical and electrical activities allied to plating and also lectures on factory management and business economics in order that we may secure a broader vision and to make our members better executives.

Second, our tendency to limit our papers and discussions to a small number of subjects. This is probably due to the lack of interest of the average electro-plater to that which does not concern his immediate needs. This may be partly due to too close confinement to getting output; lack of opportunity to experiment due to the economic system in vogue in his place of employment. Again, he may not be sufficiently progressive to include in his mental diet more than the routine course.

We may take it for granted that the average plater in seeking admission to a society such as this is, is actuated by a desire to improve his knowledge of the art and through his increased knowledge, efficiency and ability, to improve his own economic condition.

In order that he may attain this result he needs more than a bare knowledge of the fundamentals of his business and in the operating machinery of the American Electro-Platers Society we have the means of obtaining a wider knowledge which will help us to attain these ends if used to advantage. Knowledge is power, and properly used, creates enthusiasm. Enthusiasm creates optimism and the spirit of optimism is contagious. When two or three optimists get together and exchange facts they help each other. This optimism grows, it arouses ambition and makes them stronger in their convictions; their confidence in their own ability to do things is increased.

They overcome the objections of the pessimist. They make him see the bright and shining side. All of this may be brought about by enlarging the scope of our educational program to include lectures by experts in other lines of endeavor but which it is essential for us to grasp if we would grow mentally.

It is not a difficult matter to prevail on well informed men in other lines to address your meetings and take you on excursions into other fields of activity. A few excursions of this kind will do much to impress on our members' minds the importance of broader views, united aims and a keener relish for technical knowledge of every phase of electro-plating and shop economics. A study of business economics and efficiency methods as applied to other departments and businesses and the adaptation of these principles and methods to plating department requirements and the discussion of them at our meetings will aid materially in improving our knowledge and efficiency and secure a larger attendance at our meetings. Last of all as a means of making our branch society meetings of greater interest and benefit is the use of our official publication, the Monthly Review.

A larger use of this paper should be made by the branches as a medium of intercourse and as a source of information. Your editor suffers from a lack of interesting copy, due largely to the fact that our branch meetings are not reported anywhere nearly as well as they should be and a better knowledge of what each branch is doing would furnish food for discussioin in other branches.

We all realize what great things could be accomplished for the advancement of our society if each member would assume the responsibility for working out some of the problems brought out and discussed at the meetings of his own branch and would make those results known through the medium of the Review.

The success of many business ventures, commercial enterprises and societies may be traced directly to the enthusiasm and optimism of those who make up its organization. In our society these two qualities are absolutely essential for our permanent success.

Nations, business organizations or societies never have gotten beyond their ideals; to rise beyond them is impossible—to fall below

them is the common practice. Any society to achieve its best success must count on each member for his loyal support and co-operation in the furtherance of their common interests; each one striving to see not how much he can get out of the society, but how much he can put into it; to the extent that this loyalty and co-operation is secured, the individual, the branch and the society will prosper.

Each one of us should realize a profound sense of his obligation to give a part of his time, his experience and his knowledge to aid his fellow members in their effort for self improvement. The success we have achieved in the past, the opportunities of the present and the glowing promise of the future should be a stimulus to each member of the society in our effort for improvement.

(Read at the Cleveland Convention.)

SOME CONDITIONS IN PLATING-ROOMS AND HOW THEY COULD BE AVOIDED.

By D. ALLEN METZ, Philadelphia Branch.

My subject, which must be of no small concern to the practical plater, is one which, in my opinion, has been given scant attention in most plating-rooms. This may be due to the fact that the majority of manufacturers are not actively concerned in large outputs and the serious inconvenience caused in the plating-room.

The writer is not going to be radical in his writing, but simply give facts.

The majority of plating-rooms among the manufacturers are placed in one corner of the building without regard to arrangement for natural light or convenience. It seems to be the prevailing idea that the plating department is one of the simplest things to operate in the entire factory, when the fact is, it is one of the most complex problems with which the platers have to deal.

If the plating-room were arranged in the proper place with light and ventilation, it would mean a better class of work and a larger production.

In taking up the dynamo, this is one of the important items. For instance, if your generator is too small for the amount of your production, this is one of the unsatisfactory conditions. The manufacturer should use every precaution to install the proper generator with the required voltage and amperes. It is far better to have more voltage and amperes than not sufficient.

In some plating-rooms the dynamo is too far from the tanks and connected with small feed wires. The plater should take this into consideration to have the proper rods or tubing to carry the current to the tanks. It has been proven beyond a doubt, when the plating tanks are not properly connected, the plater has very unsatisfactory results.

The heating and cleaning system in the plating-room has been one of the main discussions among the platers in the American Electro-Platers' Society from time to time. Getting at the bottom of this discussion, the plater should see if he has the proper steam heating coils in his lye tank large enough for cleaning, and sufficient steam for boiling. In a few instances you will find platers heating lye with small gas burners. Those days have gone by. American electro-platers have awakaned to the fact to secure more up-to-date methods in cleaning by using the electric cleaner and the combination copper cleaner. The plater should investigate the most suitable cleaner to use and the proper way to use it; peeled work is very unsatisfactory to the plater and manufacturer.

The plater should have sufficient running water and the proper drainage in his water tank so his wrok is free from all chemicals before placing in the solutions.

Suction fans should be installed in the plating-room to carry off all fumes, in which many platers work under very unsatisfactory conditions and which are injurious to the health.

Platers should purchase the supplies; it is not the purchasing agent who has to use the supplies when they are not satisfactory. Cheap supplies cost more in the end.

Conclusion: The writer strongly urges the platers of the American Electro-Platers' Society to use motion plating, agitation and manipulation of the work, which will be one of the coming factors in the electro-plating for bright work and for preventing pitting.

The writer states that in a short time he will place before the American Electro-Platers' Society a device for agitation which can be placed on all plating tanks at a nominal cost.

BLACK NICKEL.

By O. J. Sizelove, Librarian Newark Branch.

This is undoubtedly the most popular of the black finishes and, as a very pleasing dead-black color is obtained upon most any metal, it is preferable to other methods of producing a black finish.

The deposit is obtained from a solution of the double sulphate of nickel and ammonium, to which has been added ingredients which will cause the deposit to become black.

Formerly most of the formulae called for the addition of arsenic, but a deposit from a solution containing arsenic is not really a black nickel deposit, but one in which arsenic predominates. We all know that when arsenic is employed in the coloring of metals the finish is not staple. It was therefore impossible to obtain a satisfactory black color that would not fade and one which the trade required.

From the advent of the use of sulpho-cyanide in connection with the bath dates the beginning of the true black nickel deposit. This solution has proven to be the most serviceable and one from which a permanent black color is produced.

There are two formulae in common use, both of which possess their merits:

I.	Double nickel salts	10 oz.
	Ammonium sulpho-cyanide	2 oz.
	Zinc sulphate	½ oz.
	Water	1 gal.
II.	Double nickel salts	10 oz.
	Ammonium sulpho-cyanide	3 oz.
	Bisulphite soda	½ oz.
	Water	1 gal.

Solution I is used for heavy deposits and the one most generally employed. Solution II is used quite extensively on novelty work or where a light deposit is required. The addition of bisulphite soda in Solution II has a tendency to intensify the black color.

Either ammonium or potassium sulpho-cyanide may be used, but as we have an ammonium salt in the bath it is advisable to use ammonium sulpho-cyanide.

After the bath is made it must be tested for acidity and, if found acid, must be neutralized with ammonia, as a solution that is acid will cause it to plate grey and streaky. Care must be used to avoid an excess of ammonia, as this will cause the deposit to be brittle and flake off. And excess of ammonia also causes a film to form on the anode, and this greatly retards the current.

The regulation of the current is a very important factor, and unless one volt or less is used the deposit will be grey; and with too high a voltage the deposit will be almost white. When the deposit first takes place an iridescence forms which gradually changes to a blue and finally black.

A deposit of from twenty to thirty minutes is considered a heavy deposit and one that will stand scratch-brushing or polishing. Too heavy a deposit has a tendency to flake off.

Anodes of nickel are used, preferably those that have been in use for some time, as they give up the metal more readily and help maintain the bath with the proper amount of metal.

The color of the deposit is improved if run through a ferrous chloride solution, the strength of the solution depending upon the thickness of the deposit.

All black nickel deposits should be lacquered with a black nickel lacquer.

Friendship is the only thing in the world concerning the usefulness of which all mankind are agreed. A faithful and true friend is a living treasure, inestimable in possession, and deeply to be lamented when gone.

A friend should be one in whose understanding and virtue we can equally confide, and whose opinion we can value at once for its justness and its sincerity.

WHAT THE BRANCHES ARE DOING

NOTICE TO ALL BRANCHES.

Matter for this heading must reach the editor not later than the 12th of each month. Secretaries should send in some local news each month; your own members like to read something about their own Branch in the REVIEW—other Branches are interested in knowing what you are doing. This column would be one of the strongest links which unite the Branches together. This local news never looks meager or uninteresting to us; send it in each month—we will publish it gladly.—EDITOR.

NEW YORK.

Meets second and fourth Fridays of each month at 32 Union Square. Secretary, Wm. Fischer, 300 St. Anns Ave.

The two meetings of this month were well attended as great interest is shown in the work of the laboratory committee.

This committee has sent to each member of the New York Branch and to other branches a list of questions on the best method of nickel plating tin iron, steel and die casting and the best method for striping the same.

What is the best method for nickel and silver plating direct on bright aluminum?

What causes blistering in a cyanide copper bath when plating on steel, iron and Britannia, etc.?

What causes the dull and bright streaking and smutting on cyanide copper plated work?

What is the best method of getting a black surface on brass by a dip?

These questions are to be taken up one at each meeting so that the members can have an intelligent discussion on them.

Members of the New York Branch have read some very good letters on black nickel and displayed some splendid samples.

TORONTO.

Meets fourth Tuesday of each month at Occident Hall, Bathurst and Queen Streets. Secretary, Ernest Coles, P. O. Box 5, Coleman P. O., Toronto, Ont.

The regular meeting of Toronto Branch was held in Occident Hall on Thursday, October 26th, President Salman in the chair and a fair attendance. The routine business being disposed of, the "big

feature," good and welfare, was called and proved to be "all to the good." Hot nickel solutions brought out so interesting talks. A member stating that he had produced a perfect nickel type 1-32 of an inch thick, perfect in every detail, that was being used right along, 700 lbs. pressure and on nickel silver, etc. Other members related experience with same, solution generally being nickel sulphate and magnesium sulphat (Epsom salts). This subject seems to be taking the attention of several of the members and more is expected to be heard on the matter.

Gilding, tinning and enameling were discussed and seemed to be just as interesting as ever. The question box contained the following query, "What causes an electro deposit to adhere to the base metal?" "General Opinion" "I dinna ken." The matter of having a stenographic report of the meetings of Toronto Branch was discussed and while meeting with general approval, was considered to be out of the question from a financial point of view for the present at least. However, Mr. J. Longheed volunteered to endeavor to "coax a friend" by our next meeting.

ST. LOUIS.

Meets third Saturday of each month at Public Library Assembly Rooms. Secretary, F. C. Rushton, 4405 Blair Avenue, St Louis, Mo.

The October meeting of the St. Louis Branch was held in the assembly room of the St. Louis Public Library.

President H. H. Williams called the meeting to order, and after the regular business session, E. J. Musick, "librarian," took charge. Mr. Musick used the blackboard in presenting a paper from G. S. Robins, illustrating the action of acids and alkalies on metals; it was not only interesting but a very instructive paper and will appear in the Review.

Mr. Musick revived the question box. Out of a number of questions asked, the following two were picked for discussion: What is the effect of sulphuric acid on nickel solution? which caused a lively discussion, the arguments in its favor seemed to overbalance the arguments against its use. This question will undoubtedly be taken up again. The other question taken up was: What is the best insulator to use for plating hooks and racks? Time did not allow for this question to be settled.

Mr. Musick has outlined a plan for the winter work that will make the meetings not only interesting but instructive. Each question will be taken up in its turn and threshed out.

DAYTON.

Meets first Wednesday of each month at the Y. M. C. A., Dayton, Ohio, Secretary, Alphonz Lamoureux, 432 E. Second St.

SYRACUSE.

Secretary, W. T. Manning, Jewish House, Syracuse, N. Y.

MILWAUKEE.

Meets first Tuesday of each month at West Side Bank Building, Third and Chestnut Streets. Secretary, E. C. Yaeger, 962 Ninth Street, Milwaukee, Wis.

On account of this branch taking up the chemistry class again, we found it necessary to change our regular monthly meeting from the first Friday to the first Tuesday of each month. The applicants, Edward Hespe and John G. Klein, were duly elected to membership at our last meeting. In the October Review you have our professor's name spelled wrong, the name is Arthur E. Kienth; also the application to membership, the right name is Frank J. Marx, 1423 Cherry St., Milwaukee, Wis.

CINCINNATI.

Meets on the first Friday of each month at 218 East Second Street. Secretary, F. H. Nordmann, 720 Froom Avenue, Cincinnati, Ohio.

DETROIT.

Meets first Tuesday of each month at 26 East Congress Street. Secretary, B. E. Miller, 543 Townsend Avenue, Detroit, Mich.

PHILADELPHIA.

Meets first Friday of each month in the Harrison Laboratory Building, University of Pennsylvania, 34th and Spruce Streets Secretary, Philip Uhl, 2432 North 29th Street, Philadelphia.

The regular monthly meeting of Philadelphia Branch was held November 3rd with President Bell presiding over a good attendance. After the routine of business was disposed of, Dr. Lukens gave an interesting talk on nickel plating on tin and demonstrated with iodie of mercury how the crystal separated in the tin. Mr. Otto Mott showed samples of finishes on bronze medals.

BRIDGEPORT.

Meets third Friday of each month at the office of the Brass World, 260 John Street, Bridgeport, Conn. Secretary, Nelson Barnard, 858 Howard Ave., Bridgeport, Conn.

We had a very fine meeting last Friday, the 20th, and hope it will bear good fruit for the winter months. Elected one new member who has the record of being employed by the one firm for the last 44 years. He is William Holmes of 126 Myrtle St., Steelton, employed by the International Silver Co. of that place.

CLEVELAND.

The Cleveland Branch meets every second and last Saturday of the month at 1344 East Prospect Street.

Secretary, W. D. Scott, 4110 Denison Avenue, Cleveland, O.

TOLEDO.

Meets the last Tuesday of each month at Toledo University. Secretary, James E. Nagle, 209 Navarre Ave., Toledo, Ohio.

The regular meeting of this branch was held on Tuesday, the 24th, at the Toledo University, with President H. L. Myers in the chair. As this was our first meeting for four weeks, having had to postpone the last one, we had no papers before the meeting, so we cut the meeting short and went into the laboratory and undertook to carry out the analysis of cyanide copper solutions. We were unable to complete the analysis and we will have this to go over at our next meeting. Altogether we spent a busy as well as profitable evening.

PROVIDENCE.

Meets second and fourth Wednesday of each month at No. 60 Weybosset Street. Secretary, Albert J. Lemrise, 124 Waverly Street, Providence, R. I.

The open meeting of October 7th was opened by our president, Mr. Alfred Senual, who addressed a few words of welcome to the members and visitors. Mr. John McDonough was introduced as chairman; he delivered a short address on the object of our meeting and then introduced the first speaker, Mr. Charles H. Proctor. The orator addressed his audience in a very masterly manner, his words being eagerly received by all. He dealt mostly on the origin, objects and beenfits of our Society. The poem, "If," by Kipling, was a very fitting close to his words, which were well applauded. A letter from the supreme president, Mr. H. H. Williams, was next imparted to the audience. Mr. Geo. B. Hogaboom was then introduced. He proved to be a very interesting as well as highly instructive speaker. A rising vote of thanks was given to both speakers, who were also made honorary members of our branch. A letter from Secretary M. Walter Fraine was next read to the audience. The Messrs. Flanigan, Stevenson, Dittmar and Schneider of the New York Branch and Mr. McDermid of the Bridgeport Branch, were also called on for remarks. The meeting having adjourned several new members were recruited, and their applications presented to the board. The visitors accompanied by members of the Providence Branch proceeded to the Crown hotel, where a little luncheon had been prepared for them. Our visitors expressed their pleasure of the reception accorded them and also of the manner our little affair was conducted.

We wish to express our gratitude to our visitors and also to our supreme president and secretary for their contributions. We feel convinced that our open meeting of October 7th will bear good fruits.

We have organized a class of chemistry and have had our first lesson. The Messrs. Andrews and McDonough have been appointed instructors of chemistry and Mr. G. J. Tyndall instructor of mathematics. I will have more to report on our work in that matter.

INDIANAPOLIS.

Indianapolis Branch meets second Saturday in month at Hotel Denison. Secretary, L. Mertz, 1725 Union Street.

The regular meeting of Indianapolis Branch was held October 14th and presided over by President Aufderheide.

One applicant was elected to membership and one application received.

ROCHESTER.

Meets second and fourth Friday of each month at University of Rochester. Secretary, C. V. Haring, 186 Driving Park Avenue, Rochester, N. Y.

This branch is actively engaged in the study of chemistry. The class is being taught by Messrs. Kolb and Harper, two very able instructors, and we expect some day by their guidance to get into research work, and hope to have some interesting articles to be published in the Review and make up for the seemingly lack of interest which we have been credited with.

The branch submits the following formulae for black on aluminum:

Ammonium molybdate	10 grams.
Ammonium hydrate, cp. 0.90	25 cc.
Water distilled	1000 cc.

Use about one volt; plate one-half hour with carbon anodes. Prepare the work as for the usual plating. The finish is improved if done on a sand blasted or matted surface and should be lacquered with a good transparent lacquer.

NEWARK.

Meets first and third Friday of each month, 8 p. m., 47 Bank Street, Newark, N. J. Secretary, Geo. Reuter, Jr., 28 S. 17th St., East Orange, N. J.

CHICAGO.

Meets fourth Saturday of each month, 8 p. m., Western Building, Randolph Street and Michigan Avenue. Secretary, Oscar E. Servis, 5305 Warner Ave.

The regular monthly meeting was held October 28th. After the usual routine business had been disposed of, the following committee was appointed to make arrangements for our annual banquet, some time in January: E. Lamoureux, John C. Tobinski, C. E. Thirton, H. A. Gilbertson, H. G. Binder, F. J. Liscomb, C. A. Barnes, H. E. Willmore.

The new feature this year will be the invitation of the ladies. The banquet will be followed with a dance, and it is expected that our members will have a chance to display their agility as "fox-trotters." They will have ample time for practice.

Mr. Oscar E. Lewis was elected to represent Chicago Branch on the board of education.

ELECTED TO MEMBERSHIP.

PHILADELPHIA BRANCH.

David H. Wiley.....with Henry Disston Co., Philadelphia

INDIANAPOLIS BRANCH.

Carl Clair Corner.....2347 N. Lasalle St., Indianapolis

TORONTO BRANCH.

Henry J. Harrison.....245 Bellwoods Ave., Toronto
A. H. Densem.....Bowmanville, Ont.

DETROIT BRANCH.

S. S. Hamilton.....276 Lysander Ave., Detroit
J. H. Flanagan.....294 Third St., Detroit
Chas. M. Phillips.....316 Rohns, Ave., Detroit

CHICAGO BRANCH.

Wm. Donath.....1654 Park Ave., Chicago
E. Hilliard.....2044 Bradley Pl., Chicago
Geo. W. Randell.....1273 W. Washington Blvd., Chicago

BRIDGEPORT BRANCH.

William Holmes.....126 Myrtle St., Skelton, Conn.

Mr. Holmes has the distinction of having been employed by his firm, The International Silver Co., for the past forty-four years without a break.

APPLICATIONS FOR MEMBERSHIP.

INDIANAPOLIS BRANCH.

James McDermott.....1306 W. 29th St., Indianapolis, Ind.

CHICAGO BRANCH.

Lea Pflug.....1656 N. Ballou St., Chicago
Wm. Esbach.....1642 Warren Ave., Chicago
Gus. Hilger.....603 S. Monroe St., Streator, Ill.

PROVIDENCE BRANCH.

Fred H. Grant.....629 Chalkstone Ave., Providence, R. I.
Arthur Gardner.....115 Narragansett Ave., Providence, R. I.
Thomas F. Dalton.....55 Pettis St., Providence, R. I.
Joseph F. McNeil.....29 Losbon St., Providence, R. I.
H. Greene.....22 Dingley Ct., Providence, R. I.
Wm. D. Hall.....33 Hamilton St., Providence, R. I.
Louis C. Martin.....323 No. Main St., Attleboro, Mass.

As Associate:

Francis H. Logan.....9 Poplar St., Providence, R. I.

PHILADELPHIA BRANCH.

Chas. M. Moore.....971 Wayne Ave., York, Pa.

NEWARK BRANCH.

Henry Schmidt.....Newark, N. J.

CHANGE OF ADDRESS.

Samuel R. Taylor.....242 So. 21st St., Irvington, N. J.
Philip Brod.....120 Madison St., Elizabeth, N. J.
Geo. Reutor, Jr.....28 So. 17th St., East Orange, N. J.
C. V. Haring.....186 Driving Park Ave., Rochester, N. Y.
Wm. Salmon.....104 Lake Front, Kew Beach, Toronto
J. Acheson.....1065 Dundas St., Toronto